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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/769,591	01/25/2001	William L. Betts	061607-1400	4539

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EXAMINER

PHU, PHUONG M

ART UNIT	PAPER NUMBER
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2631

DATE MAILED: 05/14/2004

3

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/769,591

Applicant(s)

BETTS, WILLIAM L.

Examiner

Phuong Phu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 February 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>2</u> . | 6) <input type="checkbox"/> Other: _____  |

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## DETAILED ACTION

### *Information Disclosure Statement*

1. The applicant is notified hereby that the IDS filed on 2/21/01 has been considered by the examiner. However, reference (09/717,436), listed under section OTHER DOCUMENTS, is not initialed by the examiner because it has not yet been published, and therefore, it is not considered as a prior art.

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "the region representing an error metric within which each primary signal point may be located" on line 8 and 9. The language "**may** be located" is not a definite language to indicate whether "each primary signal point" is necessary to be located in "the region".

Similarly, languages "**may** be located" in claims 10, 19 and 28 are not definite languages.

Claim 27 recites the limitation "the system of claim 10" on line 1. This limitation is lack of antecedent basis. It appears that the limitation should be -- the system of claim 19--.

Claims, (if any) dependent on above claims, are therefore, also rejected.

*Claim Rejections - 35 USC § 102*

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-28 are rejected under 35 U.S.C. 102(b) as being anticipated by Goldstein et al (5,394,440).

As per claims 1, 10 and 19, see figures 2, 3a, 3b, 7a, 7b, and col. 5, line 56 to col. 8, line 58, Goldstein et al discloses a method and associated system (see figure 2) comprising:

step/means (70) having a transmitter, as claimed; and

step/means (72, 55, 76, 60, 74) having a constellation encoder (60), as claimed, wherein the constellation encoder receives data words (77, 78) and develops a signal constellation including a plurality of primary signal points (PRIMARY) and a plurality of secondary signal points (SECONDARY), wherein each of the primary signal points inherently is associated with regions (e.g., at least associated with which quadrant region, or a detection region within which the primary signal points are located for their recovery in a receiving site), and wherein said plurality of second signal points are located within said regions (see col. 6, lines 41-60).

As per claims 2, 11 and 20, Goldstein et al discloses (see figure 5c) a receiver (130c) for receiving the signal constellation; and a constellation decoder (132, 134c, 138, 139) for decoding the plurality of primary signal points and the plurality of secondary points (see figures 5a-5c and col. 8, lines 66 to col. 10, line 47).

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As per claims 3, 12 and 21, Goldstein et al discloses a first mapping scheme (60a) associated with said constellation encoder (see figure 2) and a first de-mapping scheme (138) associated with said constellation decoder (see figure 5c) wherein the first mapping scheme is used to encode the primary signal points and the first de-mapping scheme is used to decode the primary signal points.

As per claim 4, 13 and 22, Goldstein et al discloses a second mapping scheme (60b) associated with said constellation encoder (see figure 2) and a second de-mapping scheme (139) associated with said constellation decoder (see figure 5c) wherein the second mapping scheme is used to encode the secondary signal points and the second de-mapping scheme is used to decode the secondary signal points.

As per claims 5, 14 and 23, Goldstein et al discloses a trellis coder (55) associated with the constellation encoder for trellis-encoding the secondary signal points (see figure 2).

As per claim 6, 15 and 24, Goldstein et al discloses an encoder (55) associated with the constellation encoder for encoding the primary signal points (see figure 2).

As per claims 7, 8, 16, 17, 25 and 26, Goldstein et al discloses (see figure 5c) a receiver (130c) for receiving the signal constellation; a constellation decoder (134c, 138, 139) for decoding the plurality of primary signal points and the plurality of secondary points; and a trellis decoder (132, 134c) for trellis decoding the primary signal points and the secondary signal points.

As per claims 9, 18 and 27, Goldstein et al discloses that the plurality of primary signal points are arranged as a first signal constellation group outputted from means (60a) and the

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plurality of secondary signal points are arranged as a second signal constellation group outputted from means (60b) (see figure 2).

Claim 28 is rejected with reasons set forth for claims 1, 2 and 9.

***Conclusion***

6. Reference (2001/0028630) and (4,660,214) are additionally cited because they are pertinent to the claimed method/system.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phuong Phu whose telephone number is 703-308-0158. The examiner can normally be reached on M-F (8:30-6:00) First Monday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on 703-306-3034. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*Phuong Phu*

Phuong Phu  
04/20/04

Phuong Phu  
Primary Examiner  
Art Unit 2631

**PHUONG PHU  
PRIMARY EXAMINER**